FACT SHEET FOR NPDES PERMIT WA-003202-6
SEATTLE MONORAIL PROJECT

This fact sheet is a companion document to National Pollutant Discharge Elimination System (NPDES) Permit No. WA-003202-6. This permit is issued to the Seattle Monorail Project to allow the discharge of stormwater and uncontaminated dewatering water associated with construction activity from Seattle Monorail Project construction activities to Lake Washington Ship Canal, Lake Union, Elliott Bay, Duwamish River, Longfellow Creek and Puget Sound. This fact sheet establishes the basis for requirements which are included in the permit.

GENERAL INFORMATION

Applicant:	Seattle Monorail Project 1904 3rd Avenue, Suite 105 Seattle, Washington 98101
Site Name and Address:	14-mile linear pathway from NW 85th and 15th Avenue NW, south across the Lake Washington Ship Canal, through downtown and over the Duwamish Waterway to California Avenue SW and SW Morgan Street, Seattle, Washington
Type of Facility:	Construction Activity
Receiving Water:	(i) Lake Washington Ship Canal/Lake Union (ii) Elliott Bay (iii) Duwamish Waterway (iv) Longfellow Creek (v) Puget Sound - Central (vi) Puget Sound – South Central
Water Body ID Number:	(i) WA-08-9340 (ii) WA-09-0010 (iii) WA-09-1010 (iv) WA-09-1000 (v) WA-PS-0240 (vi) WA-PS-0270

TABLE OF CONTENTS

INTRODUCTION

The Federal Clean Water Act (FCWA, 1972, and later modifications, 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the Clean Water Act is the National Pollutant Discharge Elimination System (NPDES) system of permits, which is administered by the Environmental Protection Agency (EPA). EPA has delegated responsibility to administer the NPDES permit program to the State of Washington on the basis of Chapter 90.48 RCW, which defines the Department of Ecology's authority and obligations in administering the Wastewater Discharge Permit Program.

Regulations adopted by the state include procedures for issuing permits (Chapter 173-220 WAC), water quality criteria for surface and ground waters (Chapters 173-201A and 200 WAC), and sediment management standards (Chapter 173-204 WAC). These regulations require that a permit be issued before discharge of wastewater to waters of the state is allowed. The regulations also establish the basis for effluent limitations and other requirements which are to be included in the permit. One of the requirements (WAC 173-220-060) for issuing a permit under the NPDES permit program is the preparation of a draft permit and an accompanying fact sheet. Public notice of the availability of the draft permit is required at least thirty (30) days before the permit is issued (WAC 173-220-050). The fact sheet and draft permit are available for review. Details on the public notice procedures are contained in Appendix A of the fact sheet. Definitions for both the permit and fact sheet are contained in Appendix B of the fact sheet.

The draft permit and fact sheet were reviewed by the Permittee. Errors and omissions identified in this review were corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. Comments, responses, and the resultant changes to the permit and fact sheet will be summarized in Appendix C. Parties that submit comments will receive a copy of the final permit and fact sheet.

BACKGROUND

DESCRIPTION OF THE PROJECT

OVERVIEW

The Seattle Popular Monorail Authority (Seattle Monorail Project, or SMP) is a City Transportation Authority formed by Seattle Petition No. 1 (November 2002), and operating pursuant to RCW 35.95A. Citizen’s Petition No. 1 authorized the Seattle Monorail Project to build the first phase of a city-wide monorail transit system. This first phase, the Green Line, is a 14-mile corridor extending from the north edge of Seattle’s Ballard neighborhood, through Downtown, to West Seattle.

The Green Line will serve a number of communities and destinations within Seattle, including Ballard, Interbay, Queen Anne, Seattle Center, Key Arena, Belltown, the Downtown retail core, Pike Place Market, Ferry Terminal, Pioneer Square, International District, Seahawks Stadium, Safeco Field, South Downtown (SODO), and West Seattle. Figure 1 shows the general route for the Green Line and the proposed locations of monorail stations and guideways. The Green Line corridor is divided into the following six geographic segments:

- Ballard - From NW 85th Street to south of the Lake Washington Ship Canal
- Interbay - South of the Lake Washington Ship Canal to W. Harrison Street
- Queen Anne/Seattle Center/Belltown - From W. Harrison Street in southwest Queen Anne to the Seattle Center area and along Fifth Avenue in Belltown to Lenora Street
- Downtown - From Lenora Street through Downtown Seattle and Pioneer Square to King
- South Downtown (SODO) - From King Street Station in Pioneer Square through the SODO area to S. Horton Street
- West Seattle - From State Route (SR) 99 to the Alaska Way Junction and then along California Avenue SW to the Morgan Junction

Figure 1 shows the geographic areas encompassed within each of these six segments. The entire project is contained within city of Seattle limits.

KEY ELEMENTS OF THE GREEN LINE

A monorail is a type of elevated railway in which train cars travel along a single rectangular beam. The trains are guided by rubber tires against the beam and propelled by electric motors. Green Line trains would be automated and would not require drivers. In addition to the trains, the Green Line would include the following key components:

Stations. The Green Line will have up to 19 stations along its route. Based on the height and orientation of the guideway at any station location, as well as the surrounding streetscape and neighborhood characteristics, one of five station types could be built: center platform, center platform with mezzanine, side platform, side platform with mezzanine, and vertically arranged.

Guideway beams. The Green Line will travel on guideway beams supported by columns and other structures. The guideways will also house other systems elements, such as the electrical transmission components needed to power the trains and the walkways needed to unload passengers in the event of an emergency. Monorail guideway beams can be arranged horizontally or vertically, and both of these configurations are evaluated in the Final Environmental Impact Statement (FEIS). The height of the guideway from the ground will vary in different locations, depending on topography, the need to maintain consistent grades, and other factors.

Guideway columns. The Green Line's guideway beams will be supported by columns and other support structures. Columns can typically be located from 60 to 150 feet apart without requiring special structures. The specific locations of these columns may be varied within this range because of soil or seismic conditions; to minimize impacts on properties, utilities, or transportation facilities; to accommodate sightlines, sidewalk widths, or a streetscape's architectural form; or to avoid being placed in front of a loading dock, driveway, or building entrance. Special supports—such as offset columns or bent structures—could be used to support the guideway beams when long clear spans, curves, or cantilevered support systems are required, such as when the guideway curves or passes diagonally across a street or intersection, or where a column location must be close to a building.

Operations Center. The Green Line will require an Operations Center for train maintenance and control functions. The Operations Center is anticipated to be located on approximately seven to ten acres of land in the Interbay segment of the corridor and would house technical and maintenance functions, including the Green Line's computerized command and control center, a train storage yard, train vehicle wash, repair shops, work bays, and offices. In addition, the Operations Center could be used as a staging area for Green Line construction and as administrative headquarters for SMP. Most train storage would occur at the Operations Center site, although temporary off-peak train storage could occur at tail tracks at the north and south ends of the line or at pocket tracks near event stations, or, potentially, at a separate train storage facility in the SODO industrial area.

Bridge. The Green Line will include construction of a new bridge across the Ship Canal (the "Ballard Crossing") running parallel to the existing Ballard Bridge, and construction of the monorail guideway on top of the West Seattle Bridge that crosses over the east and west waterways of the Duwamish River (Figure 1).

Other facilities. The Green Line will also require other, smaller facilities such as switches, tail tracks, pocket tracks, traction power substations, and train storage facilities. Potential locations for these facilities are noted as possible with the alignment and station alternatives, although in some cases, specific locations would not be determined until detailed design of a selected alignment alternative has been undertaken.

CONSTRUCTION

The first portion of the Green Line will open on December 15, 2007. Green Line construction is expected to begin in November 2004, and to continue until the end of 2009. The initial section that will open in 2007 is planned to be operational for a brief period while construction of the entire line is being completed. There is no plan to operate a shorter than full-length system for any significant period, and construction is planned for a continuous period. Construction activities in any of the six geographic segments would be intermittent over a total period of approximately 24 months. In some areas, utility relocation could require more time. Construction activities may occur on a 24-hour basis, although the intensity and type of activities that occur could be adjusted to avoid or minimize adverse impacts and to meet permit and regulatory requirements. A work-specific construction plan would be developed prior to the final design to establish the construction schedule and duration, construction approaches, and appropriate sequencing.

STAGING AREAS

Numerous construction staging areas will be required throughout the Green Line corridor. The contractor will be responsible for determining where to stage construction activities in the corridor. In general, most staging areas will occur on existing impervious surfaces.

DESCRIPTION OF THE RECEIVING WATERS

The major water bodies that receive runoff from the Green Line project corridor include the Lake Washington Ship Canal, Lake Union, Elliott Bay, the Duwamish Waterway, and Longfellow Creek (Figure 2). The Ballard segment of the Green Line project corridor lies within the Lake Washington Ship Canal drainage basin. The Interbay and SODO segments lie within the Elliott Bay basin. The West Seattle segment lies within the Puget Sound, Longfellow Creek, and West Duwamish Waterway drainage basins. All other areas of the project corridor drain to combined sewer systems.

Table 1 presents a summary of the receiving water quality characteristics in the Green Line project vicinity, including both class-based and use-based classifications according to Ecology's former and revised Surface Water Quality Standards (WAC 173-201A). Table 2 includes water quality impairment reflected in the 1998 and draft 2002/2004 303(d) list of impaired and threatened water bodies. EPA has not yet approved Ecology's revised use-based surface water quality standards.

Table 1: Ecology Previous and Revised Water Quality Characteristics of Receiving Waters Along the Green Line Project Corridor (Revised WAC 173-201A).

Receiving Water Body	Project Segment	Use Designations (Ecology 2003)	Classification (Ecology 1997)
Lake Washington Ship Canal	Between Ballard and Interbay	Salmon and trout spawning, core rearing, and migration; extraordinary primary contact recreation; and all other water supply and miscellaneous uses	Class AA Freshwater (extraordinary)
Lake Union	Downtown	Salmon and trout spawning, core rearing, and migration; extraordinary primary contact recreation; and all other water supply and miscellaneous uses	Class AA Freshwater (extraordinary)
Elliott Bay	All except Ballard	Excellent aquatic life uses; shellfish harvesting; primary contact recreation; and all other miscellaneous uses	Class A Marine (excellent)
Duwamish River	West Seattle	Salmon and trout rearing and migration only; secondary contact recreation; and all other water supply and miscellaneous uses except for domestic water supply	Class B Freshwater (good)
Longfellow Creek	West Seattle	Salmon and trout spawning, noncore rearing, and migration; primary contact recreation; and all other water supply and miscellaneous uses	Class A Freshwater (excellent)
Puget Sound – South Central/Central	West Seattle	Extraordinary aquatic life uses; shellfish harvesting; primary contact recreation; and all other miscellaneous uses	Class AA Marine (extraordinary)

Table 2. Ecology's 1998 and draft 2002/2004 303(d) list of impaired surface water bodies along the Green Line Project Corridor (Ecology 1998 and Ecology 2004).

Water Body	Approved 1998 303(d) List (Ecology 1998)	Draft 2002/2004 303(d) List and Associated Pollutants (Category 5 Listings) (Ecology 2004)
Lake Union / Lake Washington Ship Canal	Dieldrin (tissue) Sediment Bioassay (sediment)	Specified for Lake Union: Aldrin, ammonia-N, fecal coliform bacteria, lead (water) Sediment bioassay (sediment)
Longfellow Creek	Fecal coliform bacteria (water)	Dissolved oxygen and fecal coliform bacteria (water)
Duwamish Waterway	Dissolved oxygen, pH and fecal coliform bacteria (water) Numerous parameters (sediment and tissue)	Dissolved oxygen and pH (water) Numerous parameters (sediment and tissue)
Elliott Bay	Fecal coliform bacteria (water) Numerous parameters (sediment)	Dissolved oxygen and fecal coliform bacteria (water) Numerous parameters (sediment)
Puget Sound – South Central	Ammonia-N, pH, fecal coliform bacteria (water) (sediment not listed)	Fecal coliform bacteria (water) Numerous parameters (sediment)
Puget Sound – Central	Numerous parameters (sediment)	Numerous parameters (tissue)

LAKE WASHINGTON SHIP CANAL (SALMON BAY)

All alignment alternatives of the Green Line are proposed to cross the Lake Washington Ship Canal toward the west end of the canal in Salmon Bay near the Ballard Bridge. The Ship Canal transports water from Lake Union through the Hiram M. Chittenden navigation locks in Ballard.

Surface water quality in Salmon Bay is influenced by freshwater inflows from Lake Washington, combined sewage overflows (CSOs), and storm drains from the surrounding urbanized watershed, including the study area. The State surface water quality standards (WAC 173-201A) impose a special condition on the Ship Canal from the Ballard Locks to Lake Washington such that salinity shall not exceed one part per thousand (1.0 ppt) at any point or depth along a line that transects the Ship Canal at the University Bridge. The Ship Canal is listed on the 1998 303(d) list for exceeding sediment bioassay criteria and for exceeding fish tissue criteria for dieldrin (Table 2). The Lake Washington Ship Canal is not listed on the draft 2002/2004 303 (d) list.

Salmon Bay's floodplain is effectively nonexistent because the water level is controlled at the Ballard Locks. The Ballard Locks maintain the water level in the Ship Canal within a two-foot range between 20.0 and 22.0 feet (Corps of Engineers Datum). Salmon Bay's shores are lined by marinas, houseboat moorage, commercial docks and dry docks, and other industries.

LAKE UNION

Lake Union is located in a highly urbanized watershed. The Ship Canal and Lake Union represent a transitional area between the fresh waters of Lake Washington and marine waters of Puget Sound. Ecology has listed Lake Union on the 1998 303(d) list and the draft 2002/2004 303(d) list for exceeding sediment bioassay and fish tissue criteria for dieldrin. On the draft 2002/2004 303(d) list, aldrin, ammonia-n, fecal coliform bacteria, and lead have been added to the parameter list for water. The tissue listing for dieldrin is not included on the draft 2002/2004 303 (d) list.

ELLIOTT BAY

Elliott Bay, part of Puget Sound, is a tidal water body with heavily industrialized shores and a major shipping center. It also supports a variety of fish, bird, mammal, and plant species and is an important salmonid migratory route. Ecology placed Elliott Bay on the 1998 303(d) list for exceeding water quality criteria for fecal coliform and sediment bioassay. On the draft 2002/2004 303(d) list, dissolved oxygen has also been added to the parameter list.

DUWAMISH WATERWAY

The Duwamish Waterway, a tidally influenced water body, discharges into Elliott Bay, creating the Duwamish Estuary. Ecology has placed the Duwamish River on the 1998 303(d) list for exceeding water quality criteria for dissolved oxygen, pH, fecal coliform, and numerous parameters for sediment and tissue. However, on the draft 2002/2004 303(d) list, fecal coliform bacteria is not listed. The Duwamish River is designated as Class B waters of the state.

LONGFELLOW CREEK

Longfellow Creek drains approximately 2,685 acres of the Delridge and Westwood neighborhoods in West Seattle. The stream originates in Roxhill Park and flows north for approximately 4.2 miles down the heavily urbanized Delridge corridor, through the industrial area below the West Seattle Bridge, and finally discharges into the West Duwamish Waterway. Because the Longfellow Creek basin has been developed, it is assumed that the hydrology of the stream is similar to other similarly sized urban streams in Puget Sound lowland basins (SMP 2003).

Longfellow Creek is not specifically listed in the use classifications for surface waters in WAC 173-201A. Ecology included Longfellow Creek on the 303(d) list of threatened or impaired water bodies in 1998 because it exceeded fecal coliform criteria for Class A fresh water bodies. On the draft 2002/2004 303(d) list, dissolved oxygen has also been added to the parameter list.

PUGET SOUND

Ecology has listed South-Central Puget Sound and the East Passage on the 1998 303(d) list for exceeding ammonia-N, pH, and fecal coliform criteria for marine water. However, on the draft 2002/2004 303(d) list, ammonia-n and pH are not listed parameters. Central Puget Sound is on the 1998 303(d) list for sediment (numerous parameters), and on the 2002/2004 list for tissue (numerous parameters). No water parameters are listed for the Central Puget Sound.

PROPOSED DISCHARGES

The Green Line project corridor passes through several drainage areas along its 14-mile length. These drainages include areas that discharge directly to waterways and streams, to separate storm drainage systems, and to combined sewer systems, as described below. Figure 2 presents a map of the city of Seattle depicting the geographic areas served by different types of drainage systems.

Direct discharge areas are those areas that lie immediately adjacent to receiving waters and that contain drainage conveyance systems that have outfalls to the receiving water. Once runoff has entered the drainage conveyance system in these areas, it is quickly discharged to the receiving water. In many cases, there are no conveyance systems in upland areas bordering the receiving water, and stormwater sheet flows over the bank of the water body.

Separate storm drain systems occur in many areas of Seattle. Stormwater runoff is directed into a conveyance system separated from sanitary sewage in these areas. All of the separate storm drain systems in the city ultimately drain to a receiving water body.

Combined sewers convey both sewage and stormwater runoff. Much of Seattle, particularly the downtown core and surrounding areas, is served by combined sewers. Runoff that enters the combined sewer system during and after storm events is conveyed to the West Point Treatment Plant and discharged to Puget Sound west of the Magnolia neighborhood following primary and secondary sewage treatment and disinfection.

The types of discharges to receiving waters that can be expected from the Green Line construction project include runoff from construction staging areas and city streets where construction occurs, and dewatering discharges from column foundation excavation areas. Most of the discharges will be conveyed to a receiving water via existing storm drainage infrastructure.

PROPOSED PERMIT LIMITATIONS

Federal and state regulations require that effluent limitations set forth in an NPDES permit must be either technology- or water quality-based. Technology-based limitations are based upon the treatment methods available to treat specific pollutants. Technology-based limitations are set by regulation or developed on a case-by-case basis (40 CFR 125.3, and Chapter 173-220 WAC). Water quality-based limitations are based upon compliance with the Surface Water Quality Standards (Chapter 173-201A WAC), Ground Water Standards (Chapter 173-200 WAC), Sediment Quality Standards (Chapter 173-204 WAC) or the National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992). The more stringent of these two limits must be chosen for each of the parameters of concern. Each of these types of limits is described in more detail below.

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

Discharges of stormwater must meet all applicable provisions of Sections 301 and 402 of the Clean Water Act (CWA). In addition, state law requires discharges to apply all known available and reasonable methods of prevention and treatment (AKART) to prevent and control the pollution of the waters of the state of Washington.

The sand and gravel industry is engaged in significant land disturbing activities, such as earth movement, excavation, mining, and washing and sorting of aggregate. In 1994, a new Sand and Gravel General Permit was developed by Ecology in which a discharge limit of 50 NTU for turbidity was established. Over the last nine years this similar source category has demonstrated the 50 NTU limit to be achievable.

In 2002, Ecology reissued the Industrial Stormwater General Permit which required monitoring and established benchmark values for a variety of conventional parameters including turbidity. The benchmark value is not an effluent limitation but is intended to be a target indicator of whether source control and treatment measures at a facility are operating properly. The benchmark for turbidity in the Industrial Stormwater General Permit is 25 NTUs.

In 1998, Ecology first issued an Individual Construction Stormwater Permit which was based on the general permit but also required discharge monitoring. A review of available data from eight individual construction stormwater permitted facilities showed that less than 10 percent of the discharge data failed to meet 50 NTU. Therefore, a technology-based effluent limitation for turbidity of 50 NTU may be established for this permit if violations of the five over background standard occur.

The permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) which includes Best Management Practices (BMPs) to prevent the pollution of stormwater and to reduce the amount of pollutants discharged. Development of an adequate SWPPP and full implementation of BMPs constitutes implementation of AKART.

The Permittee is required to use the Department of Ecology's August 2001 Stormwater Management Manual for Western Washington (SWMM), or an equivalent manual, to make a judgment of which BMPs are necessary to achieve compliance with the AKART requirements of state law. The SWPPP must include a description of stabilization and structural practices to be used at the site to minimize erosion and the movement of sediments on and from the site. The SWPPP will be submitted to the Department for review.

The discharge of process wastewater, domestic wastewater, or noncontact cooling water to a storm drain is prohibited. Illicit discharges are not authorized, including spills of oil or hazardous substances, and obligations under state and federal laws and regulations pertaining to those discharges apply.

SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS

The stormwater discharges associated with construction activity allowed under this permit are subject to all applicable state water quality and sediment management standards. The permit does not authorize the violation of those standards. The Department expects that the selection and implementation of appropriate BMPs outlined in the *SWMM*, or equivalent manuals, will result in compliance with standards for stormwater discharges from construction sites. Erosion and sediment control planning guidance and design criteria for BMPs to control stormwater runoff quantity, erosion and sediments as well as other pollutants are provided in the *SWMM*.

When the construction site is not in compliance with these standards, the Permittee shall take immediate action(s) to achieve compliance by implementing additional BMPs and/or improved maintenance of existing BMPs.

MIXING ZONES

The water quality standards allow the Department of Ecology to authorize mixing zones around a point of discharge in establishing surface water quality-based effluent limits. Both "acute" and "chronic" mixing zones may be authorized for pollutants that can have a toxic effect on the aquatic environment near the point of discharge. The concentration of pollutants at the boundary of these mixing zones may not exceed the numerical criteria for that type of zone. Mixing zones can only be authorized for discharges that are receiving all known available and reasonable methods of prevention, control and treatment (AKART) and in accordance with other mixing zone requirements of WAC 173-201A-100. The National Toxics Rule (EPA, 1992) allows the chronic mixing zone to be used to meet human health criteria.

A mixing zone has not been specified nor established in the permit.

SURFACE WATER QUALITY CRITERIA

Applicable criteria are defined in Chapter 173-201A WAC for aquatic biota. In addition, U.S. EPA has promulgated human health criteria for toxic pollutants (EPA, 1992). Pollutants that might be expected in the discharge from construction activity are: turbidity, pH, and petroleum products.

The water quality standards for turbidity and pH for Class A waters are:

> Turbidity: shall not exceed 5 NTU over background turbidity when the background turbidity is 50 NTU or less, or have more than a 10 percent increase in turbidity when the background turbidity is more than 50 NTU.
>
> pH: shall be within the range of 6.5 to 8.5 (freshwater) or 7.0 to 8.5 (marine water) with a human-caused variation within a range of less than 0.5 units.

The water quality standards for tubidity and pH for Class B waters are:

> Turbidity: shall not exceed 10 NTU over background turbidity when the background turbidity is 50 NTU or less, or have more than a 20 percent increase in turbidity when the background turbidity is more than 50 NTU.
>
> pH: shall be within the range of 6.5 to 8.5 (freshwater) or 7.0 to 8.5 (marine water) with a human-cause variation within a range of less than 0.5 units.

Although there is no specific water quality standard for petroleum products, the hazardous waste rules under RCW 90.56 have been interpreted under RCW 90.48 to disallow visible sheen.

MONITORING REQUIREMENTS

Monitoring, recording, and reporting are required (WAC 173-220-210 and 40 CFR 122.41) to verify that the BMPs are functioning correctly and that the water quality criteria are not being violated in the receiving water.

Erosion potential and discharge of pollutants from construction sites is more closely correlated to rainfall intensity than the amount of rain in a 24-hour period. Light rain throughout a 24-hour period does not generate the pollution potential of a short duration high intensity storm event. The Industrial Stormwater General Permit, issued in August 2002, established monitoring requirements that set a storm event trigger of "greater than 0.1 inches in a 24-hour period." The Washington State Department of Transportation has recognized the limitations of only monitoring 0.5-inch storm events and now more commonly uses 0.25 in their monitoring plans. The Department may modify the permit to require 0.25-inch rain events if data indicates violations of the turbidity standards.

The Department will establish the point of compliance in the receiving water through the review and approval of the Construction Stormwater/Dewatering Monitoring Plan required in Special Condition S3.A. The downstream point of compliance shall not exceed 3 times the stream-width at the point of discharge, not to exceed 100 feet.

The Permittee is required to submit a Construction Stormwater/Dewatering Monitoring Plan by October 1, 2004, with annual updates on or before each October 1st. The purpose of the monitoring plan is to assess compliance with the water quality standards in each water body that will receive stormwater discharge during the following year.

LAB ACCREDITATION

Laboratories used to prepare monitoring data shall be registered or accredited under the provisions of *Accreditation of Environmental Laboratories*, Chapter 173-50 WAC. Flow, temperature, settleable solids, conductivity, pH, and internal process control parameters are exempt from this requirement. Conductivity and pH shall be accredited if the laboratory must otherwise be registered or accredited. Turbidity and pH may be measured in the field with properly calibrated meters.

OTHER PERMIT CONDITIONS

REPORTING AND RECORDKEEPING

The conditions of S4 are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 173-220-210).

STORMWATER POLLUTION PREVENTION PLAN FOR CONSTRUCTION ACTIVITIES

Special Condition S6 requires a SWPPP for construction activity, including construction dewatering, to be prepared and implemented prior to the commencement of construction activity. The objectives of a SWPPP for construction activities are: 1) Implement BMPs to minimize erosion and sediments from rainfall runoff at construction sites, and to identify, reduce,

eliminate, or prevent the pollution of stormwater; 2) Prevent violations of surface water quality, ground water quality, or sediment management standards; 3) Prevent, during the construction phase, adverse water quality impacts including impacts on beneficial uses of receiving water by controlling peak rates and volumes of stormwater at the Permittee's outfalls and downstream of outfalls; and 4) Eliminate the discharges of unpermitted process wastewater, domestic wastewater, illicit discharges, and noncontact cooling water to stormwater drainage systems and waters of the state.

A Spill Prevention and Emergency Cleanup Plan shall be included as a section in the *SWPPP*. BMP S1.80 in Volume IV of Ecology's *Stormwater Management Manual for Western Washington* (*SWMM*) shall be used for guidance in developing this plan.

GENERAL CONDITIONS

General Conditions are based directly on state and federal law and regulations.

Condition G1 requires responsible officials or their designated representatives to sign submittals to the Department. Condition G2 requires the Permittee to allow the Department to access the treatment system, production facility, and records related to the permit. Condition G3 specifies conditions for modifying, suspending, or terminating the permit. Condition G4 requires the Permittee to apply to the Department prior to increasing or varying the discharge from the levels stated in the permit application. Condition G5 prohibits the Permittee from using the permit as a basis for violating any laws, statutes, or regulations. Conditions G6 and G7 relate to permit renewal and transfer. Condition G8 prohibits the reintroduction of removed substances back into the effluent. Condition G9 states that the Department will modify or revoke and reissue the permit to conform to more stringent toxic effluent standards or prohibitions. Condition G10 incorporates by reference all other requirements of 40 CFR 122.41 and 122.42. Condition G11 notifies the Permittee that additional monitoring requirements may be established by the Department. Condition G12 requires the payment of permit fees. Condition G13 describes the penalties for violating permit conditions. Condition G14 states that the permit does not convey any property rights or any exclusive privilege. Condition G15 requires compliance with all conditions of this permit. Condition G16 requires compliance with effluent standards for toxic pollutants. G17 provides under the Clean Water Act that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device is subject to penalties and/or imprisonment. Condition G18 requires the Permittee to give prior notice to the Department of planned changes to facility production or processes. Condition G19 establishes the requirement to provide advance notification to the Department of anticipated noncompliance. Condition G20 requires the submittal of any relevant facts determined to have been omitted in original permit application. Condition G21 establishes compliance schedule reporting.

PERMIT ISSUANCE PROCEDURES

PERMIT MODIFICATIONS

The Department may modify this permit to impose numerical limitations, if necessary, to meet water quality standards for surface waters, sediment quality standards, or water quality standards for ground waters, based on new information obtained from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

The Department may also modify this permit as a result of new or amended state or federal regulations.

RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a stormwater and construction dewatering discharge, including those limitations and conditions believed necessary to control toxics, protect human health, aquatic life, and the beneficial uses of waters of the state of Washington. The Department proposes that this proposed permit be issued for five (5) years to coincide with the Cedar/Green Water Quality Management Area permit issuance cycle.

REFERENCES FOR TEXT AND APPENDICES

Environmental Protection Agency (EPA)

1992. National Toxics Rule. Federal Register, V. 57, No. 246, Tuesday, December 22, 1992.

1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001.

1985. Water Quality Assessment: A Screening Procedure for Toxic and Conventional Pollutants in Surface and Ground Water. EPA/600/6-85/002a.

1983. Water Quality Standards Handbook. USEPA Office of Water, Washington, D.C.

Washington State Department of Ecology.

1994. Permit Writer's Manual. Publication Number 92-109.

Seattle Monorail Project Draft Environmental Impact Statement, Volume I, June 2003
Stormwater Pollution Prevention Plan (SWPPP) Draft, November 7, 2003

APPENDIX A—PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to issue a permit to the Seattle Monorail Project. The permit contains conditions and effluent limitations which are described in the rest of this fact sheet.

Public Notice of Application (PNOA) was published on January 12, 2004, and January 19, 2004, in the *Seattle Times* and *Seattle P.I.* to inform the public that an application had been submitted and to invite comment on the issuance of this permit.

The Department published a Public Notice of Draft (PNOD) on May 4, 2004, in the *Seattle Times/P.I.* to inform the public that a draft permit and fact sheet were available for review. Interested persons were invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents were available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments were mailed to:

Water Quality Permit Coordinator
Department of Ecology
Northwest Regional Office
3190 160th Avenue SE
Bellevue, WA 98008-5452

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the thirty (30)-day comment period to the address above. The request for a hearing shall indicate the interest of the party and reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-220-090). Public notice regarding any hearing will be circulated at least thirty (30) days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing (WAC 173-220-100).

The Department will consider all comments received within thirty (30) days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, (425) 649-7276, or by writing to the address listed above.

This permit and fact sheet were written by Bob Wright.

APPENDIX B—DEFINITIONS

Best Management Practices (BMPs - general definition) means schedules of activities; prohibitions of practices; maintenance procedures; and other physical, structural, and/or managerial practices to prevent or reduce the pollution of waters of the state. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks; sludge or waste disposal; or drainage from raw material storage. In this permit, BMPs are further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

Bypass means the diversion of waste streams from any portion of a treatment facility.

Clean Water Act (CWA) means the Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, and 97-117; USC 1251 et seq.

Combined Sewer means a sewer which has been designed to serve as a sanitary sewer and a storm sewer, and into which inflow is allowed by local ordinance.

Constructed Wetland means wetlands intentionally created, on sites that are not natural wetlands, for the primary purpose of wastewater or stormwater treatment and managed as such. Constructed wetlands are normally considered as part of the stormwater collection and treatment system.

Construction Activity means clearing, grading, excavation, and any other activity which disturbs the surface of the land. Such activities may include road building; construction of residential houses, office buildings, or industrial buildings; and demolition activity.

Construction Dewatering means the act of pumping ground water or stormwater away from an active construction site.

Detention means the temporary storage of stormwater to improve quality and/or to reduce the mass flow rate of discharge.

Director means the Director of the Washington State Department of Ecology or his/her authorized representative.

Discharger means an owner or operator of any facility or activity subject to regulation under Chapter 90.48 RCW or the Federal Clean Water Act.

Domestic Wastewater means water carrying human wastes, including kitchen, bath, and laundry wastes from residences, buildings, industrial establishments, or other places, together with such ground water infiltration or surface waters as may be present.

Ecology means the Washington State Department of *Ecology*.

Equivalent BMPs means operational, source control, treatment, or innovative BMPs which result in equal or better quality of stormwater discharge to surface water or to ground water than BMPs selected from the *SWMM*.

Equivalent Stormwater Management Manual means a manual that has been deemed by Ecology as being equivalent to the *SWMM*.

Erosion means the wearing away of the land surface by running water, wind, ice, or other geological agents, including such processes as gravitational creep.

Erosion and Sediment Control BMPs means BMPs that are intended to prevent erosion and sedimentation, such as preserving natural vegetation, seeding, mulching and matting, plastic covering, filter fences, and sediment traps and ponds. Erosion and sediment control BMPs are synonymous with stabilization and structural BMPs.

Erosion and Sediment Control Plan means a document which describes the potential for erosion and sedimentation problems, and explains and illustrates the measures which are to be taken to control those problems.

Final Stabilization means the completion of all soil disturbing activities at the site and the establishment of a permanent vegetative cover, or equivalent permanent stabilization measures (such as riprap, gabions or geotextiles) which will prevent erosion.

"*40 CFR*" means Title 40 of the Code of Federal Regulations, which is the codification of the general and permanent rules published in the Federal Register by the executive departments and agencies of the federal government.

Ground Water means water in a saturated zone or stratum beneath the land surface or a surface water body.

Illicit discharge means any discharge that is not composed entirely of stormwater except discharges pursuant to an NPDES permit and discharges resulting from fire fighting activities.

Leachate means water or other liquid that has percolated through raw material, product or waste and contains substances in solution or suspension as a result of the contact with these materials.

Local Government means any county, city, or town having its own government for local affairs.

Municipality means a political unit such as a city, town or county; incorporated for local self-government.

National Pollutant Discharge Elimination System (NPDES) means the national program for issuing, modifying, revoking, and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under Sections 307, 402, 318, and 405 of the Federal Clean Water Act, for the discharge of pollutants to surface waters of the state from point sources. These permits are referred to as NPDES permits and, in Washington State, are administered by the Washington Department of Ecology.

Point Source means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure and container from which pollutants are or may be discharged to surface waters of the state. This term does not include return flows from irrigated agriculture. (See fact sheet for further explanation.)

Pollutant means the discharge of any of the following to waters of the state: dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, domestic sewage sludge (biosolids), munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste. This term does not include sewage from vessels within the meaning of Section 312 of the FWPCA, nor does it include dredged or fill material discharged in accordance with a permit issued under Section 404 of the FWPCA.

Pollution means contamination or other alteration of the physical, chemical, or biological properties of waters of the state; including change in temperature, taste, color, turbidity, or odor of the waters; or such discharge of any liquid, gaseous, solid, radioactive or other substance into any waters of the state as will or is likely to create a nuisance or render such waters harmful, detrimental or injurious to the public health, safety or welfare; or to domestic, commercial, industrial, agricultural, recreational, or other legitimate beneficial uses; or to livestock, wild animals, birds, fish or other aquatic life.

Process Wastewater means any water which, during manufacturing or processing, comes into direct contact or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.

Puget Sound Basin means the Puget Sound south of Admiralty Inlet (including Hood Canal and Saratoga Passage); the waters north to the Canadian border, including portions of the Strait of Georgia; the Strait of Juan de Fuca south of the Canadian border; and all the lands draining into these waters as mapped in Water Resources Inventory Areas numbers 1 through 19, set forth in WAC 173-500-040.

Sanitary Sewer means a sewer which is designed to convey domestic wastewater.

Sediment means the fragmented material that originates from the weathering and erosion of rocks or unconsolidated deposits, and is transported by, suspended in, or deposited by water.

Sedimentation means the depositing or formation of sediment.

SEPA (State Environmental Policy Act) means the Washington State Law, RCW 43.21C.020, intended to prevent or eliminate damage to the environment.

Severe Property Damage means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

Significant Amount means an amount of a pollutant in a discharge that is amenable to available and reasonable methods of prevention or treatment; or an amount of a pollutant that has a reasonable potential to cause a violation of surface or ground water quality or sediment management standards.

Significant Contributor of Pollutant(s) means a facility determined by Ecology to be a contributor of a significant amount(s) of a pollutant(s) to waters of the state of Washington.

Significant Materials include, but are not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under Section 101(14) of CERCLA; any chemical the facility is required to report pursuant to Section 313 of Title III of SARA; fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with stormwater discharges.

Site means the land or water area where any "facility or activity" is physically located or conducted.

Source Control BMPs means physical, structural, or mechanical devices or facilities that are intended to prevent pollutants from entering stormwater. A few examples of source control BMPs are erosion control practices, maintenance of stormwater facilities, constructing roofs over storage and working areas, and directing wash water and similar discharges to the sanitary sewer or a dead end sump.

Stabilization means the application of appropriate BMPs to prevent the erosion of soils, such as temporary and permanent seeding, vegetative covers, mulching and matting, plastic covering and sodding. See also the definition of erosion and sediment control BMPs.

Storm Sewer means a sewer that is designed to carry stormwater. Also called a storm drain.

Stormwater means rainfall and snow melt runoff.

Stormwater Drainage System means constructed and natural features which function together as a system to collect, convey, channel, hold, inhibit, retain, detain, infiltrate, or divert stormwater.

Stormwater Management Manual for Western Washington (SWMM) or Manual means the technical manual revised by Ecology for use by local governments in 2001, or statewide revisions when they become available, that contain descriptions of and design criteria for BMPs to prevent, control, or treat pollutants in stormwater.

Stormwater Pollution Prevention Plan (SWPPP) means a documented plan to implement measures to identify, prevent, and control the contamination of point source discharges of stormwater.

Surface Waters of the State includes lakes, rivers, ponds, streams, inland waters, salt waters, and all other surface waters and water courses within the jurisdiction of the state of Washington.

Treatment BMPs means BMPs that are intended to remove pollutants from stormwater. A few examples of treatment BMPs are detention ponds, oil/water separators, biofiltration, and constructed wetlands.

USEPA means the United States Environmental Protection Agency.

Water Quality means the chemical, physical, and biological characteristics of water, usually with respect to its suitability for a particular purpose.

Waters of the State includes those waters as defined as "waters of the United States" in *40 CFR* Subpart 122.2 within the geographic boundaries of Washington State and "waters of the state" as defined in Chapter 90.48 RCW which include lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and water courses within the jurisdiction of the state of Washington.

Acronyms

BMP	Best Management Practice
CERCLA	Comprehensive Environmental Response Compensation & Liability Act
CFR	Code of Federal Regulations
CWA	Clean Water Act
EPA	Environmental Protection Agency
ESC	Erosion and Sediment Control
FWPCA	Federal Water Pollution Control Act
NOI	Notice of Intent
NOT	Notice of Termination
NPDES	National Pollutant Discharge Elimination System
RCRA	Resource Conservation and Recovery Act
RCW	Revised Code of Washington
SEPA	State Environmental Policy Act
SWMM	Stormwater Management Manual for the Puget Sound Basin
SWPPP	Stormwater Pollution Prevention Plan
USC	United States Code
USEPA	United States Environmental Protection Agency
WAC	Washington Administrative Code
WQ	Water Quality

APPENDIX C—SITE MAPS

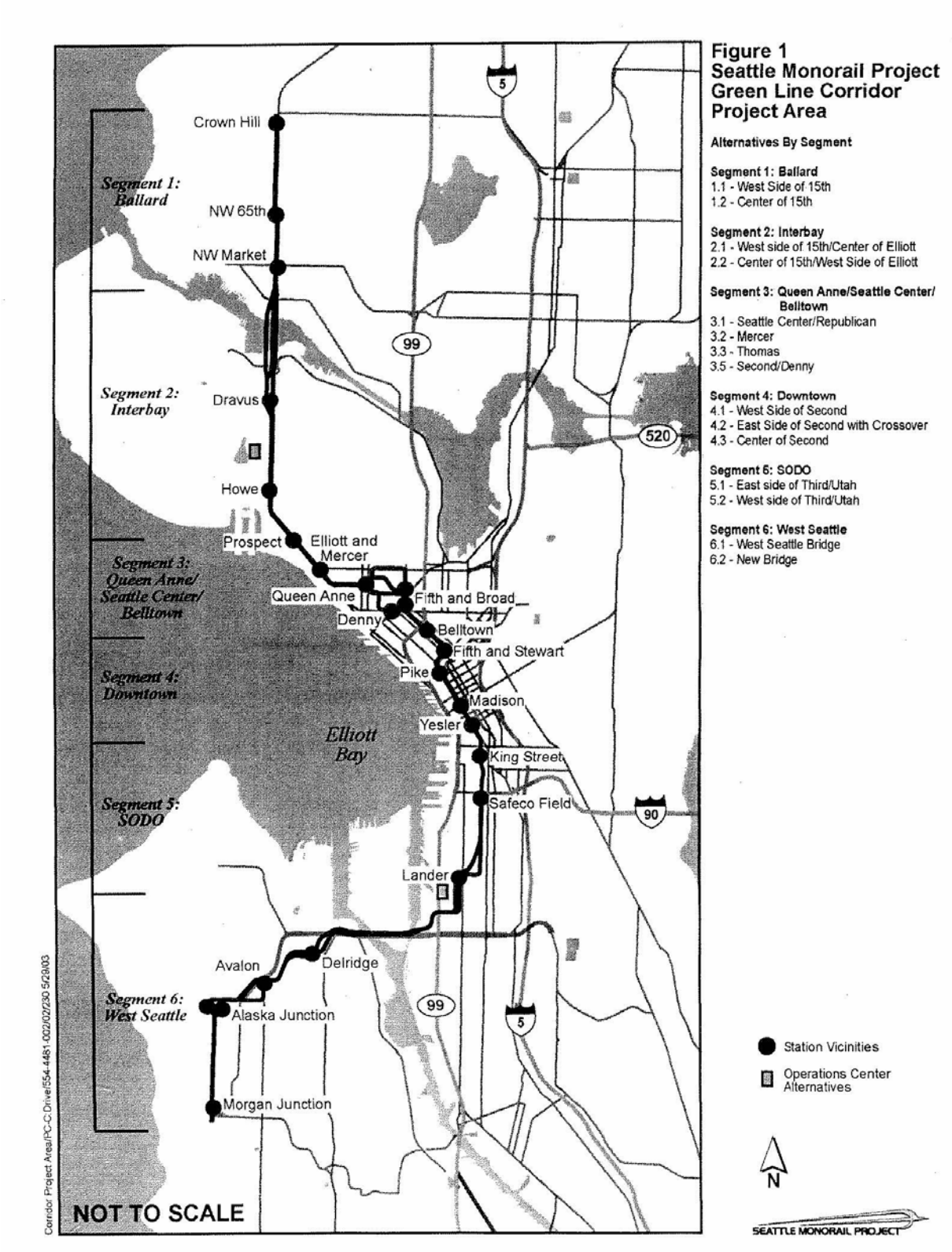

Figure 1.

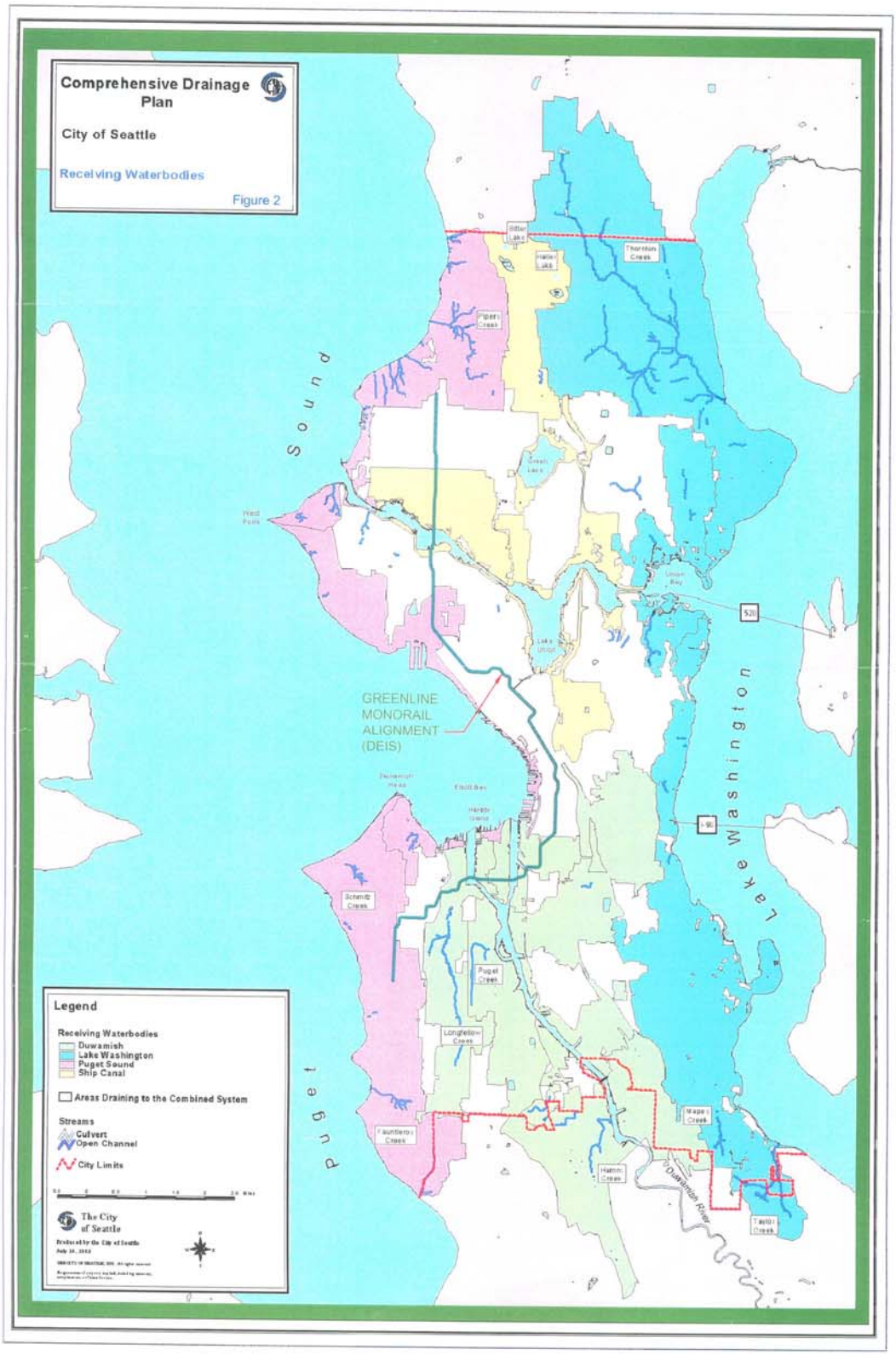
Comprehensive Drainage Plan
City of Seattle
Receiving Waterbodies
Figure 2
GREENLINE MONORAIL ALIGNMENT (DEIS)
Puget Sound
Lake Washington
Legend
Receiving Waterbodies
Duwamish
Lake Washington
Puget Sound
Ship Canal
Areas Draining to the Combined System
Streams
Culvert
Open Channel
City Limits
The City of Seattle

Figure 2.

APPENDIX D—RESPONSE TO COMMENTS

RESPONSIVENESS SUMMARY FOR THE
SEATTLE MONORAIL PROJECT NPDES PERMIT

The Department received comments from Lori A. Terry of Foster, Pepper and Shefelman, PLLC.

1. The fact sheet states a work-specific construction plan would be developed prior to the final design and contractor selection. SMP expects that the contractor will develop the plan. Delete the reference to the plan developed prior to its selection of a contractor.

   RESPONSE: The Department concurs. The reference will be deleted.

2. The 50 NTU standard for turbidity is too rigorous and suggest that the narrative criteria be utilized instead. The Sand and Gravel permit limit of 50 NTU is not appropriate for this construction stormwater project. Sand and gravel facilities last for many years in the same relative location. That industry can afford to invest in expensive treatment technology that will remain in place for years. The Seattle Monorail Project is a construction project that is vastly different from a sand and gravel operation.

   RESPONSE: The source category for sand and gravel mines and for construction sites are almost identical. The characteristics of the stormwater from both discharges are turbidity, oil and grease and pH. The sources of pollution and the control technology are similar. The BMPs, treatment, and source control are similar.

   Erosion from exposed soils following the removal of the overburden is the cause of turbidity. Sedimentation, detention and limiting exposed soils are some of the same methods of treatment common to both categories.

   Working with concrete is the source of pH for both source categories.

   And finally, spills or leaking equipment are the sources of oil and grease. And prevention measures are the same.

   Construction sites have demonstrated that 25 NTU is achievable at the point of discharge and is AKART. To be consistent with the Sound Transit permit the 50 NTU limit will be deleted.

3. For the reasons in comment 3, the rain event monitoring should be reduced to every 0.5 inch of rain.

   RESPONSE: The rain event sampling will be reduced to every 0.5-inch rain event.

4. The inspections should be reduced to 0.5-inch rain events in Condition S6.B.1.c.
RESPONSE: The inspection frequency will be reduced to 0.5-inch rain events.

5. "Monitoring Plan" should be revised to more carefully focus on Ecology's concern that contaminated soil not be transported to surface water. "The Permittee shall have the ability to determine the presence of soil contaminants in areas where likely contamination exists when those areas are being disturbed down to bare ground. Water quality monitoring will be required for identified soil contaminants that are likely to be transported into surface water at levels exceeding surface water quality standards prior to discharge of stormwater or dewatering of surface waters."

   RESPONSE: The Department concurs and the suggested language will replace the draft language.

6. The bid packages have already been completed so the Erosion Plan cannot be attached to bid packages as required by Condition S6.A.3.

   RESPONSE: The condition will be deleted.

7. The permittee is preferred to identify a pollution control officer rather than fund an independent officer as required in S6.A.5.

   RESPONSE: An independent pollution control officer is essential for credible oversight of the SWPPP.

8. The City of Seattle has several rain gauges that provide accurate rainfall data and suggest that they be used to log rain events rather than compelling Monorail to install a separate rain gauge as required in Condition S6.A.8.

   RESPONSE: If the independent pollution control officer finds the City of Seattle rain gauges to be close enough to the many construction sites they can be used in lieu of a Monorail installed rain gauge.

9. Please insert the words, "hazardous substance" before the word "liquid" in Condition S6.B.3.a. There is no regulator requirement to store liquid products on a double impervious surface with 110 percent containment.

   RESPONSE: The condition requires a durable impervious surface. This well established BMP is taken from the *Stormwater Management Manual for Western Washington* and will remain a prudent source control requirement.